

ACCOUNTING FOR THE RISE IN PERSONAL BANKRUPTCY
RATE IN THE UNITED STATES BETWEEN 1959-1987

A THESIS

SUBMITTED TO THE FACULTY OF ATLANTA UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF ARTS

BY

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ATLANTA, GEORGIA

JULY 1988

R = iv T = 59

ABSTRACT

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B.B.A., MERCER UNIVERSITY, 1985

ACCOUNTING FOR THE RISE IN PERSONAL BANKRUPTCY
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Thesis dated July 29, 1988

This thesis is concerned with the major factors that account for the rise in personal bankruptcy rate in the United States. These factors are the Reform Act of 1978, Unemployment, Divorce Rate, Debt-Income Ratio, and Age.

An econometrics model was used in both a cross-sectional and time series model to predict and see how much these factors effect personal bankruptcy.

The objective of this thesis is to use an econometrics model that helped explain successfully the cross-sectional and time series variation in personal bankruptcy.

The results of the thesis found that the Reform Act was a major cause of rise in personal bankruptcy.

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ACKNOWLEDGEMENTS

I am greatly indebted to Dr. Charlie Carter, the Chairman of my thesis committee, for his constant encouragement, valuable guidance, and sincerity toward my work.

I would like to express my appreciation to Mr. Patrick Mason, Department of Economics for his valuable advice on this thesis. I also extend my thanks to Ms. Sheila Carson who kindly spent a lot of time typing my thesis.

My gratitude is extended to my parents for the opportunity to study in the United States.

I am expressing great appreciation to my parents, brothers, sister, and friends for their love and support during this endeavor.

Finally, this thesis is dedicated to my parents, Mr. and Mrs. Osaze Uzzi.

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CHAPTER I

INTRODUCTION

Between 1959 and 1987, the number of personal bankruptcy cases in the United States rose to more than 180,000 per annum. All evidence indicates that non-business bankruptcy filing will continue to rise in 1988. Financial failures had reached such proportions in 1984 that the federal courts were processing more than 200 personal bankruptcies per hour.¹

During the twelve month period ending June 30, 1986, 568,942 Americans filed personal bankruptcy, an increase of 35.3 percent from 420,494 who filed during fiscal year 1985. Filing in 1986 surpassed the previous record of 449,839 cases filed in fiscal year of 1982 when a prolonged recession and high interest rates severely restrained the financial position of many American households. Chart 1-1 shows the historical patterns of personal bankruptcies since 1959.²

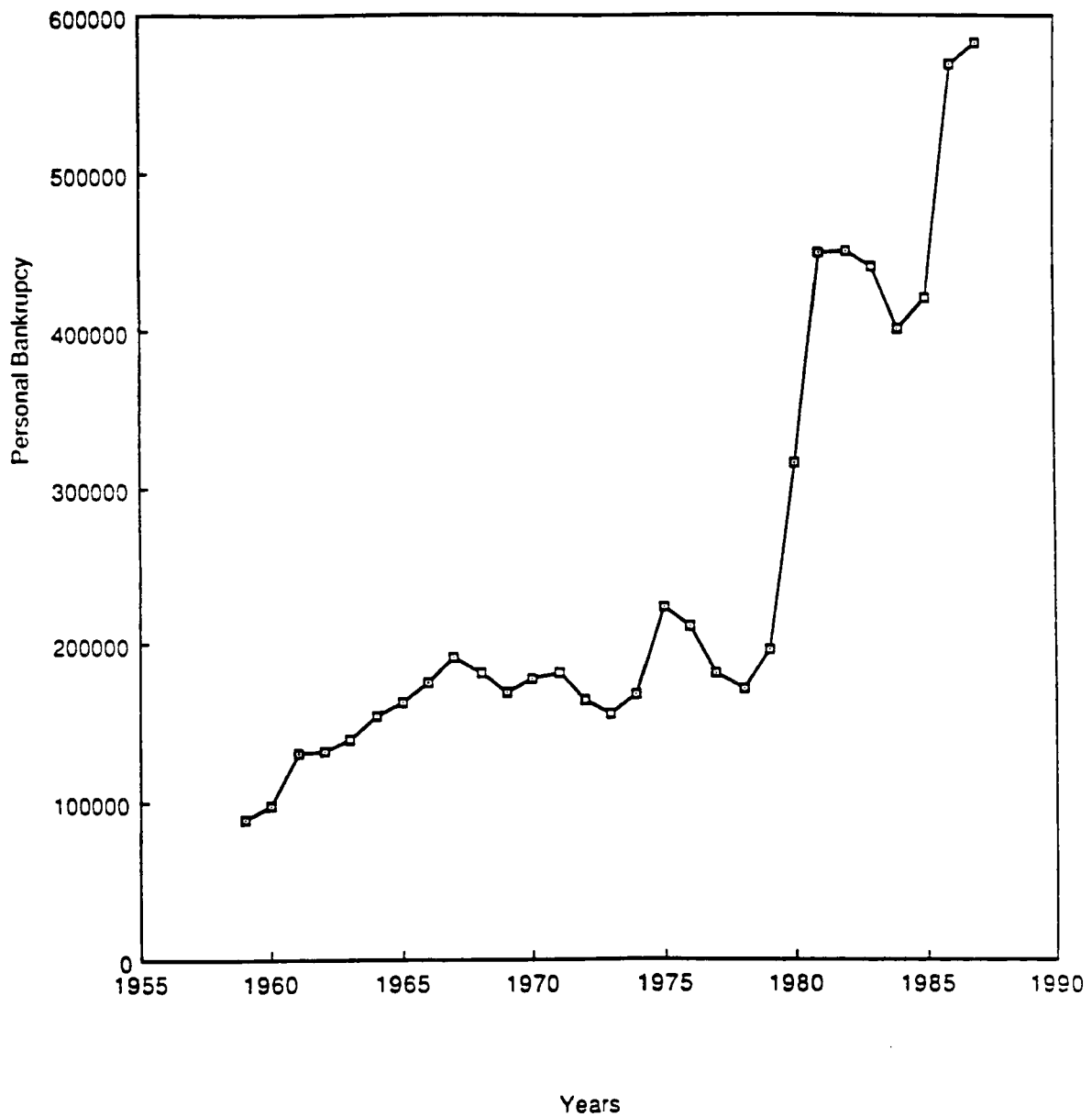
¹Lawrence Shepard, "Accounting for the Rise in Consumer Bankruptcy Reform Act of 1978," Journal of Consumer Affairs (1984a), pp. 219-231.

²Charlie Carter, "The Surge in Bankruptcies: Is the Law Responsible?" Economic Review Federal Reserve Bank of Atlanta (Winter 1982), pp. 20-30.

CHART 1-1

United States Personal Bankruptcy

1959 — 1987



Analysts generally agree that slow economic growth, high interest rates, and distortion to consumer budgets caused by unexpectedly rapid inflation during the late 1970's forced many consumers into bankruptcy; yet a large number of analysts are at least willing to consider other factors must be at play. Advertising by the legal community reduced stigma on those who filed bankruptcy; greater awareness of consumer right; the Bankruptcy Reform Act of 1978, are among other factors blamed for the rise in personal bankruptcies.³

The level and distribution of costs (social and private) associated with personal bankruptcy are enormous and are of concern to policy makers. Those individuals who consider themselves financial failures often coincide with pronounced personal stress, marital discord, and loss of home. Moreover, such debtors are generally stigmatized by society and frequently encounter difficulty securing future credit.

Aside from the consequences of personal bankruptcy suffered by an individual, creditors also share in these costs. Several billion dollars in financial obligations

³Ramona K. Heck, "An Econometric Analysis of Interstate Differences in Non-business Bankruptcy and Chapter Thirteen Rates," Journal of Consumer Affairs, Vol. 15 (1981), pp. 13-31.

are forgiven by bankruptcy court each year, representing a transfer of wealth from creditors to debtors.

In 1980, the bankruptcy court relieved consumers of \$12 billion in personal debt--about \$14 for every man, woman, and child in the United States.⁴ During that same year, Sears reported an increase in loss of 109% while Citibank reported an increase of 56% during that same year.⁵

With personal bankruptcies on an enormous rise, research on the subject of personal bankruptcy is needed to help explain its fivefold increase during the past two decades. Concern has been expressed over the burden of consumer indebtedness on the economic stability of the economy. The study of personal bankruptcy and causal factors responsible for personal bankruptcy can possibly enhance our understanding of the economic impact of credit. Secondly, the rising bankruptcy rate possibly indicates that a significant portion of our population has serious financial problems, and it is important to learn more about

⁴Charlie Carter, "The Surge in Bankruptcies: Is the Law Responsible?" Economic Review Federal Reserve Bank of Atlanta (Winter 1982), pp. 20-30.

⁵K. Kowaleki, "Personal Bankruptcy: Theory and Evidence," Economic Review Federal Reserve Bank of Cleveland (Spring 1982), pp. 1-30.

the nature and extent of this problem and try to determine solutions. Third, it is desirable to learn whether the new law is operating efficiently, in the sense of meeting its objective for which it was designed.

Objective of the Study

The purpose of this study is to provide a careful analysis of factors that affects personal bankruptcy. We do so by analyzing the importance of social, demographic and economic characteristics underlying personal bankruptcy over the period 1959-1987. Our ultimate objective is to develop an econometrics model that would more successfully explain time series and cross-sectional variation in personal bankruptcies. The model is then to be used to predict future trends in personal bankruptcies.

Specific objectives of this are:

- 1) To specify a testable model which incorporates the information derived from earlier studies.
- 2) To use the model to predict future trends in personal bankruptcies.
- 3) To test the accuracy of the model using a sample of 300 personal bankruptcies in Atlanta during the year of 1985.

Order of Presentation

This thesis analyzes the determinant of aggregate consumer bankruptcy rates in the United States during the post-war period 1959-1987. Chapter II provides an overview of federal and state bankruptcy codes. Chapter III outlines previous research studies on consumer bankruptcy in order to determine the set of factors viewed by others as important in explaining the rise in personal bankruptcy. The theoretical framework used to analyze social, economic and demographic influence on consumer bankruptcy is presented in Chapter IV. In Chapter V, the model is tested using aggregate personal bankruptcy data for the period 1959-1987 and for a sample of 300 personal bankruptcy cases in Atlanta. Empirical findings are summarized along policy implications and suggestions regarding the future cause of research into personal finance are all included in Chapter V. The Appendices offer tables and relevant information used in the study.

CHAPTER II

THE NEW BANKRUPTCY REFORM ACT OF 1978

The Bankruptcy Reform Act was adopted by the United States Congress in November of 1978. It was the first major revision of the 1898 Bankruptcy Act in 40 years. The Act was intended to modernize and make code uniform across the nation. Before the new code came into effect, states established their own dollar value of exemptions. Despite the new federal law, states were still allowed to opt out of the federal law by establishing their own exemptions. Since 1978, about 37 states have opted out of the federal exemption.

In discussing the code, this study reviews the type of bankruptcies available to the consumer, discusses federal exemptions, and finally discusses homestead and motor vehicle exemptions in six southeastern states all of which have opted out of the federal law.

Types of Bankruptcy Petition

There are currently two types of bankruptcy petitions available to consumers; Chapter 7 and Chapter 13. This thesis is only concerned with Chapter 7 and Chapter 13.

Chapter 7 petition is complete liquidation of assets. Here, all assets of the bankrupt's estate, except those specifically exempted, are sold to pay the debt of the bankrupt. A trustee is appointed to pay and distribute the assets of the estate under 11 U.S.C. Section 702. The trustee distributes the assets in the order of priorities specified in the Bankruptcy Code until all assets of the estate are exhausted, then discharged from further debts. Any individual who resides or has a business in the United States can file Chapter 7 provided the individual has not filed a petition within 180 days that has been dismissed voluntarily by the court.

Chapter 13 is a rehabilitation plan. Under this plan, a trustee is appointed to distribute all or some portion of the debtor's future income. The debtor is given the exclusive right to file a payment plan. A discharge of debt is granted after all payments have been completed, and creditors have received no less than what they would have received in a liquidation proceeding. Any individual who resides or has a business in the United States and has a regular source of income can file Chapter 13 provided the individual has not filed bankruptcy that has been dismissed voluntarily or by the court within 180 days of

filing. An individual's secured debt should not exceed \$100,000 and unsecured debt should not exceed \$35,000.

The Federal Exemption Law

Exemption are the assets that cannot be liquidated when a person files personal bankruptcy. It is designed to help individual who file bankruptcy to make a "fresh start." An individual who wants to file always considers the exemptions available before deciding whether it would be beneficial to file. Critics of the new code said the new federal exemption law encourages people to file, instead of looking for other ways of dealing with their debt.

The federal exemptions are as follows:

1) \$7,500 in homestead, real or personal property, that the debtor or dependent of the debtor uses as a residence or in a burial plot for the debtor or dependent. This exemption only applies to the debtor's interest in the property. An example of how it works is if a debtor has jointly owned assets of \$20,000 and \$10,000 is left to be paid in which his/her own interest is \$5,000, the debtor's interest is fully exempt. For a joint filing, the homestead exemption is \$15,000. This homestead exemption property includes mobile homes, houseboats, and non-ownership interest such as leases.

2) \$1,200 in value in one motor vehicle. If the car is above the \$1,200 amount, the debtor could use his unused portion of another exemption.

3) \$200 in value on any item, in household furnishings, household goods, wearing apparel, appliances, books, animals and musical instruments held primarily for personal, family or a dependent of debtor like the others. For a joint filing, the value is doubled to \$400. In 1984, Congress amended this law by giving the limit of \$4,000 for individual household goods and \$8,000 for joint filing.

4) \$500 jewelry held primarily for personal, family or household use for debtor or the dependent. In this exemption only \$500 is allowed but if the jewelry is more than \$500, the debtor may use the unused portion of any other exemption. This kind of exemption is called "wild card exemption" because it would be a benefit to the debtor's total exemption.

5) \$400 amount of any property plus any unused amount of homestead amount up to \$3,750 per debtor. This was usually \$7,500 of homestead property but it was changed in the 1984 amendment. This still gives tremendous flexibility to both owners and renters. It could be used for non-liquid property, causes of action, tax refund, cash benefits, public benefits already received and other.

6) \$750 in value of any instrument, professional books or tools of trade of the debtor or a dependent. This exemption may overlap with other exemptions because they may be used for things other than tools of trade. An example is a car. This could be used as personal and as a tool of trade.

7) Any unmaturred life insurance contract owned by debtor or dependent. Any insurance other than a credit life insurance can be exempted. This is for the interest of the debtor's life insurance which does not have cash value. Any interest policy that does not have cash or loan value could be included and it could be exempted in full.

Credit life insurance is excluded in a subsection and if the debtor is a beneficial of this policy and the owner is still alive, no exemption is to be made, since the debtor has to have property interest in it. If the person dies within 180 days of the debtor's filing for bankruptcy, it can be used because it becomes the property of the debtor's estate.

8) Professionally prescribed health aid for a debtor or dependent. This covers wheelchair and artificial limbs. It also includes specially equipped automobile and automobile essentials to receiving medical treatment.

9) Social Security benefits, unemployment compensation or local public assistance benefits, veteran's disability, illness and unemployment benefits are all exempt. These exemptions are only for future benefits that are to come. Past ones are not exempted.

10) Alimony support or separate maintenance to an extent reasonably necessary for support of the debtor and any dependent of the debtor are exempt. It is left to the court to decide what amount of this exemption is a reasonable amount of standard of living.

11) An award under crime victims reparation law. This should not exceed \$7,500 on account of body injury but not include pain and suffering or pecuniary loss and of a person who depends on the debtor.

12) A payment under a life insurance contract that insured life of an individual of whom the debtor was a dependent on the date upon such individual's death to the extent reasonable for support of the debtor and dependent.

13) Retirement funds of Civil Service employee of the United States and employee of the same executive department.

14) Money payable under the foreign service retirement and disability system.

15) Benefits for death and disability of persons covered by the Longshoreman Harbor Worker Compensation Act.

16) Special pension paid to winners of the Congressional medal of honor.

17) Benefits under any law administered by the United States Veteran's Administration.

18) Money paid or payable or rights existing under the Social Security Act.

19) Federal homestead land on debt contracted before issuance of patent.

20) Annuities and pensions under the Railroad Retirement Act of 1936.

21) Railroad unemployment insurance benefit.

22) Wages of fishermen employed on fishing vessels, seamen and apprentices.

23) Compensation for injury or death from war risk hazards suffered outside the United States, contract employee of post exchanges and ship service outside the United States.

CHART 2-1
STATE EXEMPTIONS

State	Year state opted out federal law	Motor Vehicles	Homestead
South Carolina	5/4/81	\$1,200 in one motor vehicle	\$5,000 in real property or personal property that the debtor uses as a residence
Louisiana	10/1/79		\$5,000 exemption in real property or personal property that the debtor uses as a residence. Married couples may claim only one homestead. It should not exceed 160 acres
Texas	Not opted out	The motor vehicles exemption is part of the personal property over all \$30,000 for joint and \$15,000 for single filing	Not more than 200 acres for family. Not more than 100 acres for a single person
Florida	10/1/79		160 acres outside the municipality or 1/2 acres inside the municipality and the homestead is subject to certain liens
Tennessee	7/1/86		\$5,000 in value of real property or personal property that the debtor uses as resident. \$7,500 for joint filing

Chart 2-1--Continued

State	Year state opted out federal law	Motor Vehicles	Homestead
North Carolina	10/1/81	-	\$7,500 in value or real property or personal property that the debtor uses as resident. This homestead exemption is subject to claim
Georgia	3/24/80	Up to \$1,000 in all motor vehicles	\$5,000 per debtor in value of real property or personal property that the debtor uses as a resident
Alabama	5/19/80	-	\$5,000 in value or real property or personal property that the debtor uses as a resident, subject to certain liens

CHAPTER III

LITERATURE REVIEW

The volume literature on the rise in personal bankruptcy have increased since the Bankruptcy Reform Act took effect on October 1, 1979. There is now considerable literature focusing on why people file bankruptcy. Many authors attribute the sharp rise in bankruptcies to the new law, unemployment rate, divorce rate, recession, too much use of credit, interest rate, age, race, shorter work week, drop in income, debt-income ratio, and race.

Authors like Shiers and Williamson used a model of risk reduction to analyze personal bankruptcy. The model demonstrated how state and federal laws can affect the quantity of resources that lenders devote to reduce loan risk. They focus on how liberalized exemptions have increased the number of people who filed.¹

The estimating model used was as follows:

$$\begin{aligned} \text{TBKPC}_t = & a_0 + a_1(\text{UR} - \text{UR}_{t-1}) + a_2\text{DURC}_b + a_3\text{PMINE}_{t-3} \\ & + a_4\text{GARND}_t + a_5\text{OPUTD}_t + e \end{aligned}$$

¹Alden F. Shiers and Daniel P. Williamson, "Non-business Bankruptcies and the Law: Some Empirical Results," Journal of Consumer Affairs, vol. 21, no. 2 (1987): 417-432.

where:

BKPC_t = Number of non-business bankruptcies filed per 1,000 population

UR = Unemployment rate

DVRC = Number of divorces per 1,000 population

PMINE = The fraction of personal income generated by mining sector

GARND = A dummy variable measuring the restrictiveness of a state's garnishment law (=0 in states with no garnishment law and 1 otherwise)

OPOUTD = A dummy variable measuring the restrictiveness of a state's exemption levels

e = error term

t = 1980, a time subscript

Cross-sectional data taken from 1980 was used in their study.

Their expected result was that a low percentage of personal income from the mining sector should bring a reduced bankruptcy rate because the supply shock of energy in the economy in 1979-1980. They expected to find a lower personal bankruptcy rate in 1980 for those states where mining accounts for a higher percentage of personal than for those states where the mining sector accounts for little or none of state income. They had no theoretical expectation for wage garnishment to be theoretically undetermined. States with high exemptions were expected to

experience high personal bankruptcy rates. Unemployment and divorce rates were expected to add to the per capita bankruptcy rate.

They had three equations and three results. One on total bankruptcy, the other two on Chapter 7 and Chapter 13. The results were as follows:

Total Bankruptcy:

$$\begin{aligned} \text{TBKPC} = & 0.182(\text{UR}-\text{UR}_{t-1}) + 0.099\text{DVRC} + (-5.818)\text{PMINE} + \\ & (3.192) \quad (3.523) \quad (3.150) \\ & (-0.156)\text{GRAND} + 0.767\text{OPOUTD} + 381 \\ & (1.138) \quad (4.933) \quad (1.976) \end{aligned}$$

$$\bar{R}^2 = .55, \text{ S.E.E.} = 0.41.$$

Chapter 7:

$$\begin{aligned} \text{BKPTC} = & 0.156(\text{UR}-\text{UR}_{t-1}) + 0.086\text{DVRC} + (-1.918)\text{PMINE} + \\ & (3.455) \quad (3.851) \quad (1.988) \\ & 0.180\text{GRAND} + 0.431\text{OPOUTD} + 0.226 \\ & (1.646) \quad (3.487) \quad (1.474) \end{aligned}$$

$$\bar{R}^2 = 0.51; \text{ S.E.E.} = .33.$$

Chapter 13:

$$\begin{aligned} \text{BKPC} = & 0.055(\text{UR}-\text{UR}_{t-1}) + 0.026\text{DVRC} + (-6.326)\text{PMINE} + \\ & (1.333) \quad (1.303) \quad (4.754) \\ & (0.032)\text{GRAND} + 5.067\text{OPOUTD} + 0.169 \\ & (0.328) \quad (5.062) \quad (1.219) \end{aligned}$$

$$\bar{R}^2 = 0.44; \text{ S.E.E.} = .30.$$

t statistics are in parentheses.

In the actual result wage garnishment was found to be statistically insignificant. Unemployment and divorce rate in Chapter 13 and Chapter 7 had their expected signs and were statistically significant at the 99 percent level of confidence but they were both insignificant to the rise in personal bankruptcy rate. PMINE had a statistically significant positive sign in all equations. Although the wage garnishment levels was found to be insignificant, the level of asset exemption was highly significant to all three equations.

The asset exemptions' dummy variable was also used to change the slope parameter of the estimated equation. OPOUTD was then replaced with UROPOUTD (which is the change in unemployment multiplied by the exemption dummy variable). The results were as follows:

Total Bankruptcy:

$$\begin{aligned}
 BKPC = & 0.142(UR-UR_{t-1}) + 0.95DVRC + (-4.866)PMINE + \\
 & (2.289) \quad (3.228) \quad (2.557) \\
 & (-0.158)GRAND + 0.382UROPOUTD + 0.463 \\
 & (1.093) \quad (4.268) \quad (2.298)
 \end{aligned}$$

$$\bar{R}^2 = 0.50; S.E.E. = 0.43.$$

Chapter 7:

$$\begin{aligned}
 \text{BKPC} = & 0.129(\text{UR-UR}_{t-1}) + 0.083\text{DVRC} + (-2.428)\text{PMINE} + \\
 & (2.725) \quad (3.705) \quad (1.672) \\
 & (-174)\text{GRAND} + (0.231)\text{UROPOUTD} + 0.276 \\
 & (1.576) \quad (3.376) \quad (1.798)
 \end{aligned}$$

$$\bar{R}^2 = 0.50; \text{S.E.E.} = .33.$$

Chapter 13:

$$\begin{aligned}
 \text{BKPC} = & 0.024(\text{UR-UR}_{t-1}) + 0.023\text{DVRC} + (-5.715)\text{PMINE} + \\
 & (0.538) \quad (1.091) \quad (4.102) \\
 & (0.022)\text{GRAND} + 0.246\text{UROPOUTD} + (-0.106) \\
 & (0.204) \quad (3.754) \quad (0.715)
 \end{aligned}$$

t statistics are in parentheses.

Increases in unemployment rate given, bankruptcy rates were estimated to be higher in states with a low asset exemption level. The regressions did not show that the exemption level of the Bankruptcy Act caused an increase in the rate. Instead, it showed that those states that had high exemptions had high rates of personal bankruptcy and those with low exemptions, low rates of personal bankruptcy. Then they regressed the exemption dummy variable against personal bankruptcy rates in 1978. The maximum likelihood estimates with the asymptomatic t-statistics were:

$$\begin{aligned}
 \text{OPOUTD} = & -5.69 + 4.27 \text{BKP78} \\
 & (-3.47) \quad (3.03)
 \end{aligned}$$

$$\text{LR} = 15.61 \text{ (likelihood ratio = LR).}$$

The result then showed that there was a direct relationship between bankruptcies and per capita income in 1978. It predicts for states that have opted out federal law have lower levels of bankruptcy rates. They then concluded that bankruptcy rate is inversely related to change in income that is not anticipated at the time of loan. Asset exemption laws served as a substitute for the resources lender in order to reduce the risk of default loans.

The paper did not find that increase in the asset exemptions under the Bankruptcy Reform Act caused personal bankruptcy to increase.

Before the new law came into effect, Harris studied causes of personal bankruptcy. In it, he argued that most American households are insolvent and these people use bankruptcy to relieve them from debt. He also argued that insolvency of households is caused by an inadequate provision for contractual commitments such as bank loans and installment contracts or emergencies such as medical bills.

Most households, Harris suggested, were not concerned with the future. They continue to place their money in less liquid assets such as durable goods instead of more liquid assets like savings accounts. Durable goods are

difficult to liquidate and therefore cannot help them when they experience financial difficulty.²

The use of credit cards, national sales networks and credit mechanisms, he said, may have forced households into bankruptcy. The increasing number of filings is also increasing costs for creditors and they pass those costs on to the public in the form of higher interest rates. He concluded by saying people with lack of knowledge of credit and proper budgeting are those who file for bankruptcy and to prevent this, people should utilize credit counseling.

Yeager used Harris' idea of insolvency to develop his model in which he tried to determine whether the problem of personal bankruptcy constituted a threat to the aggregate economic stability in the United States. He used two models; the bankruptcy growth model and insolvency model.³

In his bankruptcy growth model, insolvency was considered a prerequisite to bankruptcy; that was to say, the number of consumers who commence bankruptcy proceedings

²Duane G. Harris, "Prosperity and Personal Bankruptcy," Economic Review Federal Reserve Bank of Cleveland, (1971): 3-9.

³Frederick C. Yeager, "Personal Bankruptcy and Economic Stability," Southern Economic Journal, vol. 141 (1974): 96-104.

in a given period could never exceed the number of insolvent consumers; thus

$$B_t < I_t$$

where:

B_t = The number of consumer units who commence bankruptcy in year t

I_t = The number of insolvent consumer units in year t

Some consumers who are insolvent do not file. Then the previous equation can be written as,

$$B_t = q_t I_t \text{ and } q \leq 1$$

B_t and I are as defined above, and

q = Proportion of insolvent consumer units choosing bankruptcy in year t .

For the economy as a whole, insolvency is measured as

$$I_t = f(P_t, N_t, R_t)$$

where:

I_t is as defined as above, and

P_t = Size of consumer population unit per year.

N_t = Number of consumer units in P_t in debt in year t .

R_t = Ratio of liabilities to assets for consumer units in year t .

On a per capita basis:

$$B_t/P_t = q_t[g(N_t, R_t)]$$

where P_t is population and all other variables are defined earlier. Yeager used cross-sectional data covering the period 1952-1963.

In his study, the growth in bankruptcy was expected to destabilize the economy. Younger people who are heads of household are in great debt.

Yeager then found that more Americans tended to be in the insolvent, especially younger households under the age of 35. In 1962, 69% of younger households (25-34) had liquid assets less their \$500 in value. The percentage of liquid assets to income declined between 1952 and 1962. He also developed another model to observe the change in insolvency.

$$B_t/P_t = N_t a + R_t b$$

B_t , P_t , N_t and R_t are as defined above.

$$a = 0 < a < 1.$$

$$b = 1 - a.$$

$$d(B/P)_t = q + CP$$

$$(B/P)_{t-1}$$

where C = change.

If $Uq > 0$, bankruptcy would rise. If $Cq < 0$, bankruptcy would fall. Here he used the data between 1950-1970. He found that debt grew by 19 percent between 1950-1965 while income also rose. Yeager also estimated the impact of debt burden with results as follows:

$$P = 72.3 + 8.46D$$

$$(.494)$$

$$S_{PD} = 7.2, R^2 = .94, n = 20$$

P = Per capital incidence of bankruptcy.

D = Debt burden lagged six months.

Debt burden did not prove significant to bankruptcy rates.

Yeager's study concluded that personal bankruptcy increases do not threaten the stability of the economy. He also found that, despite the increase in personal bankruptcy, creditors continue to consider consumers trustworthy.

Shepard conducted two studies on the problem of personal bankruptcy. The first was concerned with reasons for the rise in personal bankruptcy. He analyzed the determinants of aggregate consumer bankruptcy rates in the United States in the post-war period.⁴

The estimated model used was

$$PB = bRCI + bUE + bCE + bNWP + bDR + bBC + C + E$$

where:

PB = Personal bankruptcy per 100,000.

RCI = Ratio of consumer installment and non-installment credit to personal disposable income.

⁴Lawrence Shepard, "Accounting for the Rise in Consumer Bankruptcy Reform Act of 1978," Journal of Consumer Affairs (1984a): 219-231.

CP = Per capita equity in residential real estate
(deflated).

UE = Unemployment rate lagged one year.

NWP = Non-white proportion of the population.

DR = Divorce rate.

BC = Bankruptcy reform code of 1978 (1945-1979);
otherwise

C = constant.

E = error term.

The study used time series data covering the periods 1945-1981. The time series trend influenced trends like leverage, divorce rate, and unemployment. Also, it influenced the new federal law and black deviant to bankruptcy.

He estimated two regression equations, one on Chapter 13 and the other, Chapter 7. The results were as follows:

Chapter 7:

$$\begin{aligned}
 PB = & 3.03RCI + 2.87UE + (-0.57)CP + 31.45NWP + 13.57DR + \\
 & (3.78) \quad (2.67) \quad (-8.31) \quad (5.94) \quad (4.02) \\
 & 20.30BC + (-238.7) \\
 & (1.98)
 \end{aligned}$$

$$\bar{R} = 0.97, DW = 1.61.$$

Chapter 13:

$$PB = 1.32RCI + (-0.08)CP + 4.37DR + 32.37BC + (-1.72)$$

$$(11.25) \quad (-4.73) \quad (5.23) \quad (17.75)$$

$$\bar{R} = 0.93, DW = 1.98.$$

t statistic is reported in parentheses.

Shepard expected divorce rate to have a positive effect on bankruptcies. Unemployment was expected to affect only Chapter 7 filings. Per capita equity in residential real estate was suppose to reduce bankruptcy consumer installment debt. The non-white proportion of the population was to have a positive effect. The new code was also expected to positively affect both chapters.

As expected, the ratio of consumer installment and non-installment debt to disposable income were positively related to bankruptcy. A one percent change in debt income ratio was associated with a rise of 3.03 bankruptcy and 1.32 Chapter 13 failure per 100,000 people. Chapter 7 specifications carried the correct sign and is statistically significant only when there was a one year lag in unemployment. It did not have any effect on Chapter 13.

The variable of residential wealth caused a drop in personal bankruptcy. Divorce rate was more significant to Chapter 7 than 13. The non-white proportion of the

population was also significant in Chapter 7 but not in Chapter 13. The new law was significant to higher rates of bankruptcies.

He came to conclude that extensive use of credit is a significant factor in explaining financial failure. Divorce rate and proportion of non-white filing are significant contributors to high bankruptcy rates.

In Shepard's second article, the impact of the Bankruptcy Reform Act on the increase in personal bankruptcy was studied.⁵ He used the same estimating model as in his previous study except that government transfers were added. The model was as follows:

$$PB = RCH1 + UR + CP + CGP + NWP + C + E$$

where:

PB = Personal bankruptcy per 100,000.

RCI = Ratio of consumer installment debt to personal disposable income.

UR = Unemployment rate.

CP = Per capita equity in residential real estate (deflated).

NWP = Non-white proportion of the population.

⁵Lawrence Shepard, "Personal Failures and the Bankruptcy Reform Act of 1978 with regards to Personal Bankruptcy," Journal of Law and Economics (1984b): 419-437.

CGP = Expected government transfer per capita (trailing three years marginal data deflated).

E = error term.

Time series data was used covering the period of 1948-1983.

Shepard expected the unemployment rate to have significant positive effect on Chapter 7 bankruptcies. The consumer installment and non-installment credit to disposable income variable were expected to have an insignificant effect per capita in residential real estate to have a negative effect. Government transfer was to have a positive effect in increase in bankruptcy. Also, non-white population was expected to have a positive effect on bankruptcy.

The actual findings were as follows:

Chapter 7:

$$PB = 3.35RCI + 1.30UR + (-48)CP + 18.83NWP + 0.20CGP \\ (5.33) \quad (1.41) \quad (-6.54) \quad (3.75) \quad (2.78) \\ + (-116.13)$$

$$R^2 = .20; DW = 1.8.$$

Chapter 13:

$$PB = .44 + 0 + (-0.9) + 3.79 + 0.05 + 18.91 \\ (2.99) \quad (-5.65) \quad (3.17) \quad (2.95)$$

The results showed a positive effect of the unemployment rate in Chapter 7, but no effect in Chapter 13. Non-white population showed a significant link to

increase in the rate of the two chapters. Government transfer had a positive sign and it was significant to the increase in bankruptcies.

In conclusion, the Bankruptcy Reform Act was said to have an effect on the bankruptcy rate. The effect of rising in consumer wealth was offset by substantially higher levels of government support, a dominant influence in determining the rate. The debt discharged with this doubling of bankruptcy rate was up to \$1 billion for Chapter 7 alone.

Carter's article dealt with whether increases in bankruptcy rate in the United States and the Southeastern states was caused by the Bankruptcy Reform Act.⁶

He examined trends in bankruptcy in the United States and Southeastern states from 1959-1981. He noticed that the snow-belt states had less bankruptcy growth than in the Sunbelt states and that people are moving to the Sunbelt states where there is high economic growth and this is why the increase is more.

His main focus was on the effect of the law and the effect of the recession on the increase in bankruptcy rate.

⁶Charlie Carter, "The Surge in Bankruptcies: Is the Law Responsible?" Economic Review Federal Reserve Bank of Atlanta (Winter 1982): 20-30.

This was done by subtracting the trends of bankruptcy and the change in past economic downturns from the actual level bankruptcy rate in 1980, and ascribed any additional increase to the law. He estimated the influence of increasing unemployment and decline in working conditions on the rise in bankruptcies and then ascribed any residual increase in bankruptcies to the influence of the federal law and other factors that changed over time.

In the study, he estimated that the new code accounted for two-thirds of personal bankruptcies in 1980. The increase did not affect the Southeastern states as much as the United States.

Hecks developed a stochastic model to account for the observed variations in bankruptcy. The estimating model was as follows⁷:

$$PB = AG + BPR + DR + MI + UR + TCO + CO + DI + CCO - LPW + LLW + N + S + W$$

where:

PB = Personal bankruptcy per 100,000.

AG = Percentage population between 25-34.

BPR = Percentage of population which was black.

DR = Divorce rate.

⁷Ramona K. Hecks, "An Econometric Analysis of Interstate Differences in Non-business Bankruptcy and Chapter Thirteen Rates," Journal of Consumer Affairs, vol. 15 (1981): 13-31.

MI = Percentage of manufacturing income.

UR = Unemployment rate.

TCO = Total credit to office per 100,000 population.

CO = Percentage of credit offices which were finance companies.

DI = Debt income ratio per capita.

CCO = Existence of one or more consumer credit counseling offices.

LPW = Existence of law prohibiting garnishment.

LLP = Existence of law monitoring wage garnishment.

N = North.

S = South.

W = West.

Hecks estimated two equations; one for Chapter 7 and the other on Chapter 13. The expectation from these equations were: Divorce rate was expected to be positively related to Chapter 13 and 7. Unemployment was to be positively related to Chapter 7 alone. Credit offices per 100,000 and finance companies were to be positively related to personal bankruptcy. The ratio of consumer ratio debt to income was suppose to be positively related to personal bankruptcy.

A negative relationship among consumer credit counseling office service and bankruptcy was expected. Also, an inverse relationship between wage garnishment and

bankruptcy was expected. For the variables pertaining to states, there were no expected causative relations. The estimated results were as follows:

Chapter 7:

$$\begin{aligned}
 PB = & (-9.90)AG + (-.61)BPR + 14.01DR + 0.09MI + 2.29UR + \\
 & (-1.58) \quad (-0.66) \quad (2.62) \quad (.10) \quad (0.37) \\
 & (-1.10)TCO + 1.84CO + 1.73DI + 12.03CCO + \\
 & (0.14) \quad (2.44) \quad (.48) \quad (.88) \\
 & (-89.77)LLW + (-21.31)LLP + 91.90N + 72.95S + 94.75W \\
 & (-3.86) \quad (-1.21) \quad (.96) \quad (.67) \quad (1.84)
 \end{aligned}$$

$$\bar{R}^2 = 0.864; \text{ Overall } F = 22.62.$$

Chapter 13:

$$\begin{aligned}
 PB = & 3.12AG + 1.01BPR + 9.55DR + 0.17MI + 5.58UR + 1.05TCO \\
 & (-0.58) \quad (1.28) \quad (2.88) \quad (0.20) \quad (1.04) \quad (1.68) \\
 & + (-.65)CO + 1.26DI + 18.39CCO + (-24.16)LLW + \\
 & (-1.00) \quad (0.41) \quad (1.57) \quad (-1.21) \\
 & (-32.75)LLP + (-56.85)N + (-49.65)S + (-88.76)W \\
 & (-2.17) \quad (-.65) \quad (-.53) \quad (-.89)
 \end{aligned}$$

$$\bar{R}^2 = 0.305; \text{ Overall } F = 2.43.$$

The result showed that the adjusted R^2 was low in Chapter 13. The divorce rate had positive sign, similar effects, and was significant in the two equations. Age also had significance to the bankruptcy rate event though it had a negative sign. Credit offices which were finance

companies had a positive effect on Chapter 7 and negative sign in Chapter 13 and was insignificant.

The states that had prohibited wage garnishment had a significant effect on Chapter 7 but not on Chapter 13. This proved that insolvency causes households to utilize Chapter 7.

State populations with lots of blacks had a significant and positive relationship with Chapter 13. It had a negative and insignificant relationship with Chapter 7. Total credit offices per 100,000 population and credit counseling was positive and significant to both equations. State laws which limited wage garnishment had a negative significant effect only on Chapter 13.

In Heck's conclusion, he said that high divorce rates and the percentage of a state's total credit office which were finance companies are associated with higher non-business straight-line bankruptcy. While higher percentages of a state's population between the age of 25 and 34 and the existence of prohibiting wage garnishment law suppressed non-business straight bankruptcy rates.

High percentage of black divorce rates and number of credit offices per 100,000 population were associated with Chapter 13. The law limiting wage garnishment was associated with lower Chapter 13 rates.

Finally, he said a high percentage of bankruptcy may provide more credit sources to higher risk borrowers such as low income individuals and many whom do not seek these legal solutions to their financial problems.

The objectives of this literature survey enhance our understanding of the personal bankruptcy. This thesis will adopt the methodologies from existing literature to examine specific factors responsible for cross-sectional variation in personal bankruptcies. An important aspect of the thesis is to develop an econometric model that would predict a future rise in personal bankruptcy. This thesis would provide an explanation to banks, policy-makers, creditors, and other people involved in making decisions about the cause about rise in personal bankruptcy.

CHAPTER IV
HYPOTHESIS, MODEL, OBJECTIVE AND DATA SOURCE

A. Hypothesis

The following hypotheses are suggested based upon a review of the literature of personal bankruptcy.

Unemployment. Several studies used unemployment to help explain personal bankruptcy. A change in the income of a debtor affects the likelihood of personal bankruptcy. Debt repayment and loss of employment results in unexpected decline in money income, that is, a loss of income due to unemployment causes an increase in the debt/income ratio. The repayment of outstanding debt becomes more difficult and burdensome as loan payments require a larger proportion of income. In a situation where unemployment is prolonged and other sources of income are limited, creditors will threaten legal actions. The debtor is left with no choice but to file personal bankruptcy.

In 1982, the national unemployment rate was 9.7 percent. During that same year the number of personal bankruptcies was a record 449,839. Most states experienced unusually high unemployment and high personal bankruptcy

TABLE 4-1

Unemployment Rate

1959 — 1984

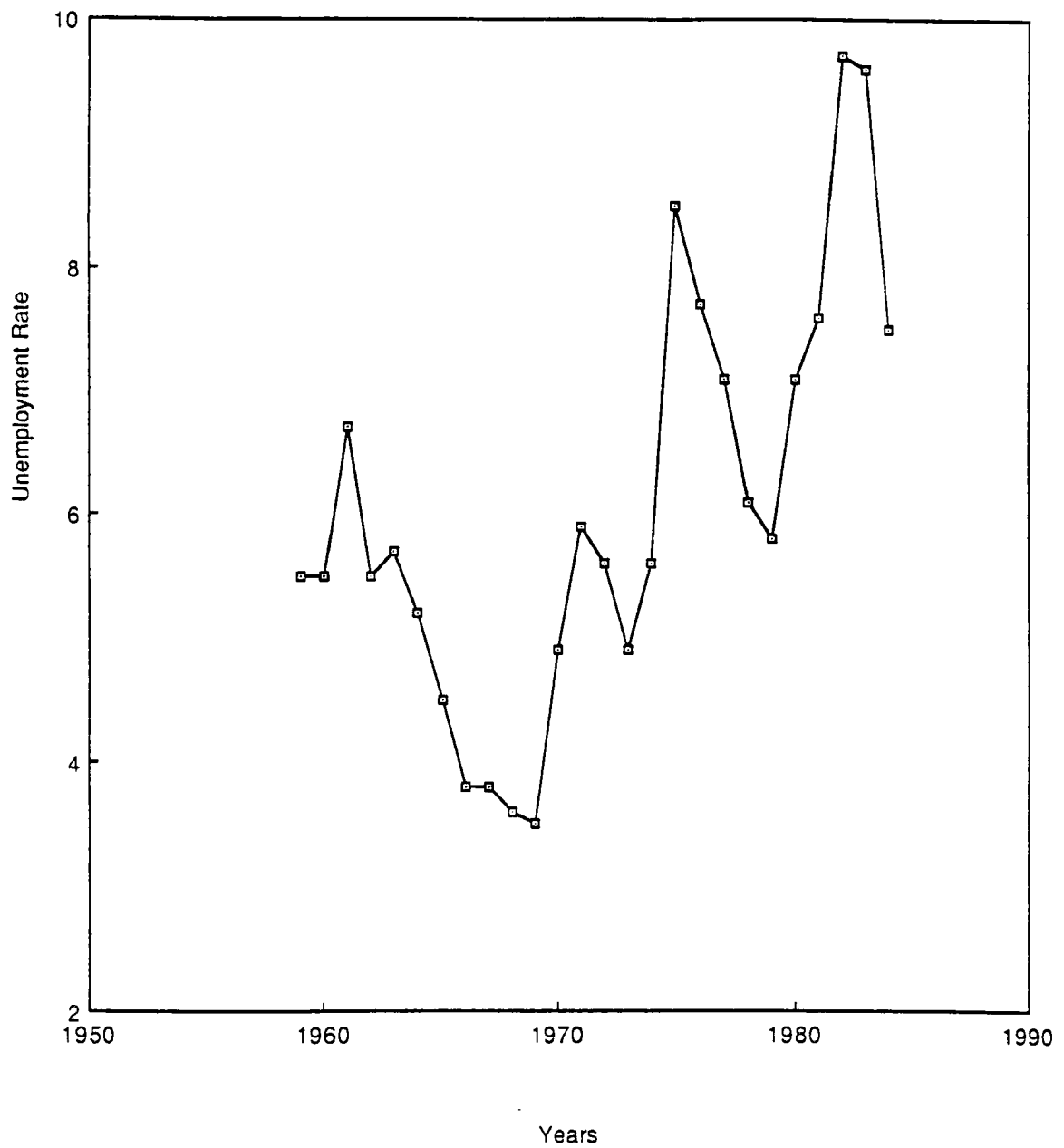
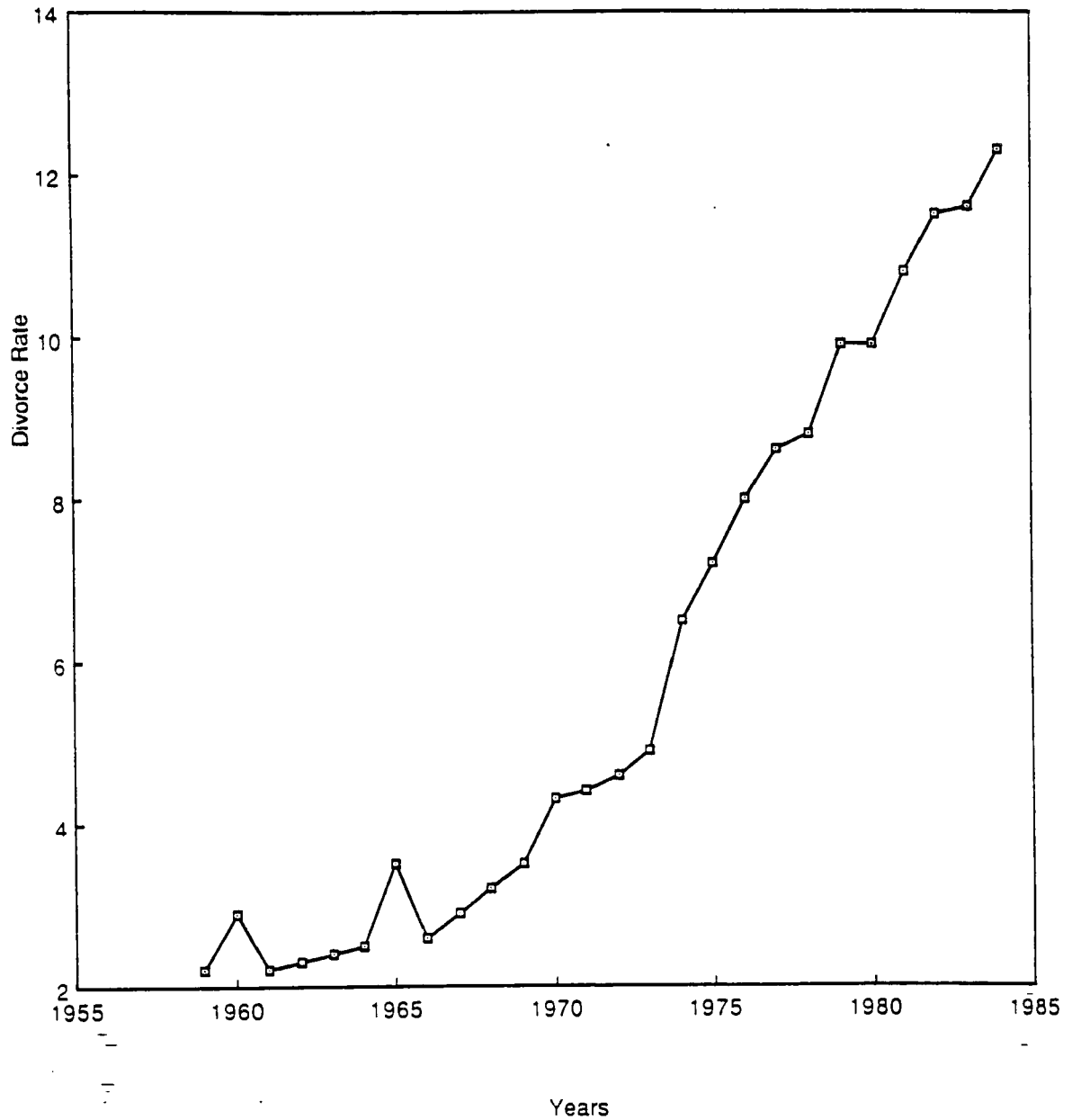


TABLE 4-2

Divorce Rate

1959 — 1984



filings again in 1986. Table 4-1 shows the unemployment rates in the United States over the years 1959-1984.

Divorce rate. Divorce rate is the separation of a family unit. This separation involves expenses such as the legal costs of filing for divorce, one person having to move out of the house, and the payment of alimony or child support. This expense may lead to insolvency and insolvency has been found to cause personal bankruptcy. With this assumption, as the divorce rate in the nation rises, we expect personal bankruptcy to rise.

Since the post-war period, the divorce rate has increased. Table 4-2 shows the rise in divorce rate since 1959. A statistically significant and positive correlation is expected between divorce rates and personal bankruptcy.

Debt-income ratio. Based on previous research, household insolvency causes people to file for personal bankruptcy. With extensive use of credit, people are now spending more than they earn. This has forced more people into debt in which they are not able to meet minimum payments. These debtors would be left with no option but to file for personal bankruptcy. The Yeager study found that between 1950-1965, the debt-income ratio doubled but stabilized at about 19% increase between 1966-1970. During the latter period, the increase in personal bankruptcy rate

was more stable at about 90 per 100,000 population. With Yeager's finding, we decided to add the debt-income variable to our set of explanatory variables.

We expect the debt-income ratio to be positive and statistically significant related to personal bankruptcy.

Age. Most people who file for personal bankruptcy are said to be young. Yeager's study found that the average solvent asset held by young people in 1962 was valued at \$500. We included the variable in our model to show the effect of age on personal bankruptcy. The percentage of people in the population between the age of 25-34 was used because people in that age group tends to be more insolvent. This is so because they have more bills to pay and it is at this time of their lives they are trying to establish households.

We expect a positive relationship between personal bankruptcy and the percentage of the population between 25 and 34. We also expect age to be statistically significant to personal bankruptcy.

Exemptions. Through exemptions, certain assets of the debtor can be excluded from liquidation. Since this law was passed in 1979, there has been a great deal of criticism about this part of the law. Critics have said

that the law is too generous and encourages more people to file personal bankruptcy.

The variable entered the model as a dummy. In the time series data, we used zero from 1959 to 1978 and from 1979-1983 one was used. This is to show the effect the reform act has on personal bankruptcy filing. When the exemption was used cross sectionally, one represented states who had opted out of the federal homestead exemption and had a lower homestead exemption than that of the federal homestead exemption. Zero was used to represent both the states that had a higher homestead exemption and had opted out the federal exemption and those that still used the federal exemption.

In both of the studies, we expect the exemptions to be significantly related to personal bankruptcy and statistically significant to personal bankruptcy.

B. Model

There were two estimating equations used in the study of personal bankruptcy. One used for the time series data and the other used for the cross-sectional data. Overall, six variables were used--one dependent variable and five independent variables. All variables were transformed to natural logarithm except exemptions.

Time Series Model

$$\ln PBR_t = \quad + B_1 \ln UE + B_2 \ln DR + B_3 \ln DI + B_4 EL + e$$

where

PBR = Personal bankruptcy per 100,000

UE = Unemployment rate

DR = Divorce rate

DI = Debt-income ratio

GL = Exemptions 0 for 1959-78 and 1 otherwise

t = Error term

= Constant

Cross-Sectional Model

$$\begin{aligned} \log PBR_t = & \quad + \log B_0 (UE - UE_{t-1}) + \log B_1 DR + \log B_2 Age \\ & + B_3 EL + e \end{aligned}$$

where

PBR = State personal bankruptcy per 1,000

_UE = State unemployment rate

DR = State divorce rate per 1,000

Age = State population age (25-34)

EL = State exemptions

C. Objectives

The objectives of the study is to estimate the effect of the above factors on personal bankruptcy rate in the U. S. over the period 1959-1987. We assume a non-linear

relationship between the rate of personal bankruptcies and the set of independent variables discussed earlier.

The ultimate objective is to structure an econometrics model that would successfully explain the time and cross-sectional variation in personal bankruptcies. This model would then be used to predict future trends in personal bankruptcies.

Specific objectives are

- 1) To specify a testable model which incorporates the information derived from earlier studies
- 2) To use the model to predict future trends in personal bankruptcies.
- 3) To test the accuracy of the model using a sample of 300 personal bankruptcies in Atlanta during 1986.

D. Data Source

The data used covers the period 1959-1987 for the United States. This data were gathered from the following sources:

- 1) Personal bankruptcy was from the Administrator of the United States Court, Federal Bankruptcy Tables 1959-1987.
- 2) Unemployment rate was from The United States Department of Labor Bureau of Labor Statistics.

3) Debt-income ratio was from the United States Department of Commerce, Federal Reserve Bulletin.

4) Divorce rate was from the National Center of Health Statistics, Monthly Vital Statistical Report.

5) Age was from the United States Department of Commerce Bureau of Census.

CHAPTER V

STATISTICAL ESTIMATION PROCEDURE

This study used regression analysis to analyze the association of social, economic and the legal environment of the Federal Bankruptcy Act with personal bankruptcy before and after the law took effect.

Two equations were used in the estimation. For time series equation, the data was from 1959-1984. The unemployment rate, divorce rate and the debt-income ratio for these years were used. The dummy variable was used for the exemptions by using zero from 1959-1978 and one from 1979-1984.

The cross-sectional data was taken from fifty states for 1986. The divorce rate for all fifty states was used. For unemployment, the unemployment rate was lagged one year. In order to determine the effect states law on personal bankruptcy, we used the state homestead exemption. A state's homestead exemption whose value was less than the federal exemption took the value of one. Otherwise it took zero. The percentage of people for each state population between 25-34 was used for age.

We expected all variables in the time and cross-sectional data to be positive and statistically significant.

In the actual results, all variables had the theoretically expected sign and most were statistically significant at 5 percent or better. The F value shows that the model was appropriately specified.

In the cross-sectional equation all the explanatory variables are jointly significant to personal bankruptcy. The unemployment rate, divorce, and exemption are also significant. But age is not significant because the actual number was used.

In the time series data, only the debt-income ratio and exemptions are significant. Unemployment rate is not significant; this may be due to the fact that unemployment insurance partially cushions the effect of unemployment on family incomes. The divorce rate was marginally significant. The table below shows the regression results.

TABLE 5-1

REGRESSION RESULTS

U. S. PERSONAL BANKRUPTCIES RATE FROM 1959-1984

Dependent Variable	Independent Variable	
	Time Series Total Bankruptcies per 100,000 population	Cross-sectional Total Bankruptcies per 100,000 population
Unemployment rate	0.028932 (0.156)	1.11497 (3.624)
Divorce Rate	0.158717 (1.230)	0.523427 (1.526)
Exemptions	0.732399 (6.223)	0.213481 (2.488)
Debt-Income Ratio	1.14384 (1.769)	
Age		0.108222 (1.152)
Constant Term	8.792695	1.732394
R ²	.8737	0.4321
Dubin Watson Statistics	1.313	2.238
F analysis of variance	36.33	8.56
S.E.E.	0.1662	0.2714329

The values in parentheses represent the t-statistics.

A. Time Series Results

$$\begin{aligned} \text{PBRIn} = & 8.792695 + 0.028932\text{UE} + 0.158717\text{DR} \\ & (0.156) \quad (1.230) \\ & + 1.14384\text{DI} + 0.732399\text{EL} \\ & (1.769) \quad (6.223) \end{aligned}$$

where numbers in parentheses represent t values.

$R^2 = 0.2737$, S.E.E. = .1662, DW = 1.33.

F analysis of variance = 36.33.

The values in parentheses in the equation represents the t value.

The equation explains 87.37 percent of the time series variation of personal bankruptcies. The analysis of F value shows significance of the specification of the equations. This then proves that the explanatory variables are jointly significant in explaining the rise in personal bankruptcy. The explanatory variable does not show significant correlation between themselves which means that there is no relationship between the explanatory variable. The Matrix of Correlation Coefficient is presented in the Appendices.

At 99 percent confident level, although the unemployment rate sign was as expected, it did not prove to be significant to personal bankruptcy rate. Shepard explained this insignificance by the fact that unemployment insurance partially cushioned the financial hardship

imposed by joblessness for approximately one year. The coefficient indicates that a one percent increase in the unemployment rate, increased the amount of personal bankruptcy by about 289 cases.

The annual divorce rate proved to be slightly significant to personal bankruptcy. The coefficient matrix (appendix) shows that the divorce rate are correlated personal bankruptcy. The estimated coefficient showed that a one percent increase in divorce rate increased personal bankruptcy by 1,587 cases.

The debt-income ratio result was significant as expected. There was a correlation between personal bankruptcy rate and the debt-income ratio. This shows that insolvency can lead to personal financial failure. The estimated coefficient showed that the debt-income ratio increase the personal bankruptcy rate by 114,348 over the time period specified.

The variable capturing the final potential determinant of the rise in personal bankruptcy rate was the exemption. The estimated coefficient showed that the change in the exemption, increased personal bankruptcy by 7,323 cases.

The constant showed that if all the explanatory variables were zero, personal bankruptcy rates would increase by 8.79.

B. Cross-Sectional Results

We used the data from 1986 from fifty states.

$$\text{SPBRL} = 1.73239 + 1.11497\text{UESL} + 0.523424\text{DRSL}$$

(3.621)
(1.526)

$$+ 0.213481\text{EL} + 0.108222\text{Age}$$

(2.488)
(1.152)

$$R^2 = 0.4321, \text{ S.E.E.} = 0.2714329, \text{ DW} = 2.134.$$

The numbers in parentheses in the equation represent the t value.

Although we had a low R^2 with a significant F value, the explanatory variables are jointly significant.

The cross-sectional result was different from the time series result in the unemployment rate. Unemployment rates proved to be highly significant. It was estimated that a one percentage point change in the unemployment rate increased personal bankruptcy rate by 11,149.

The effect of divorce rate was also as expected. The estimate was positive and significant. The coefficient estimate, indicates that a one percentage change in divorce rate increased personal bankruptcy by 523,427.

Using a different approach in dunning our exemptions, the exemption variable seemed to have little effect on personal bankruptcy. The fact that some states had lowered their homestead exemptions, the exemption variable was significant but it was less significant than it was in the

time series data. The coefficient estimate suggested that the exemption helped increase the number of personal bankruptcy by 2,134.

The age variable was positive but not significant. The estimate coefficient estimated that a one percentage change in the age variable increased personal bankruptcy rate by 1,082.

C. Application of the Results to Georgia

A study was done on three hundred personal bankruptcy cases in 1985. During this year, Georgia had 16,641 personal bankruptcy cases and the United States had 420,494 cases.

Georgia had a high rate of unemployment of 7.2 percent and the average disposable income for Georgia in 1985 was \$29,222.

In our study, we observed the occupation of those who filed the amount of secured and unsecured debt they owe to different creditors.

Creditors were grouped into three categories: Banks, non-financial banking institution and others. The occupation distribution was as follows: white collar, blue collar, service workers, unemployed, and retired or disabled.

The percentage of those who filed matches the percentage of Georgia's occupational distribution. White collar workers made up the largest working population. White collar workers make up 50.9 percent of the working population and in the study done on personal bankruptcy, 53 percent of the people who filed were white collar workers.

Blue collar workers make up 23 percent of Georgia's working population, the second largest group. The percentage of blue collar workers who filed for personal bankruptcy was 30%.

Service workers made up a small percentage of those in the working population. They make up 12.6 percent of the working population and those who filed for personal bankruptcy made up 11 percent.

The unemployment rate in Georgia in 1985 was 7.2 percent. In our grouping of the occupational distribution, we kept the unemployed, retired, and disabled into the same group. This was done because when they were left in separate groups their percentages were small. Grouping them together, they made up 6% of those who filed.

With this result, we can say that in Georgia, the largest occupational distribution of those who file for personal bankruptcy are white collar workers and the lowest were the unemployed, disabled and retired.

The average income of those who filed personal bankruptcy by the occupational group is summarized in Table 5-2.

In our study on the amount of secured and unsecured debts, white collar workers had the highest percentage and amount of debts both for the secured and unsecured debt. The unemployed, retired and disabled had the lowest. Table 2 summarizes the amount and percentages of debt owed by each occupational group to each group of creditors.

TABLE 5-2

GEORGIA RESULTS

OCCUPATIONAL DISTRIBUTION AND THE MEAN INCOME
OF THOSE OBSERVED

Occupation	% Occupation Group	Mean Income
Blue Collar	30%	20,053.14
White Collar	53%	20,659.23
Service Workers	11%	22,734.27
Unemployed, disabled and retired	6%	13,384.75

Source: Tabulations based upon data collected from Atlanta Bankruptcy Court.

TABLE 5-3

THE DOLLAR AMOUNT AND PERCENTAGE OF SECURED AND
UNSECURED DEBT OWED BY DEBTORS TO CREDITORS

Occupation	Secured		Unsecured	
	\$	%	\$	%
<u>White Collar:</u>				
Banks	1348365.54	22%	450319.65	27%
Non-bank financial institutions	1971347.66	32%	168876.15	10%
Others	746153.52	12%	413831.48	25%
<u>Blue Collar:</u>				
Banks	117223.04	2%	208515.21	12%
Non-bank financial institutions	850636.19	14%	68614.11	4%
Others	68030.51	1%	142208.49	8%
<u>Service Workers:</u>				
Banks	358331.88	6%	27693.84	2%
Non-bank financial institutions	287465.39	5%	35426.45	2%
Others	40292.32	.008	79247.08	5%
<u>Unemployed, Disabled and Retired:</u>				
Banks	175020.77	3%	45653.17	3%
Non-bank financial institutions	105469.87	2%	17913.40	1%
Others	9067.22	.002	28842.92	2%
TOTAL	6077403.91	100%	1687141.95	100%

Source: Based upon tabulations collected from the Atlanta Bankruptcy Court.

D. Conclusion

Our study shows that the Bankruptcy Reform Act of 1978 which was to help people make a "fresh start" after a financial failure is a major cause of the increase in personal bankruptcy rate.

Econometrics results confirm that debt-income ratio, exemption and divorce rate are also major contributing factors to personal bankruptcy. Although unemployment rate and age was not statistically significant, they are also contributing factors to personal bankruptcy.

The study on personal bankruptcy in Georgia shows that more white collar workers in Georgia file for personal bankruptcy than any other occupation and that creditors are losing a considerable amount of money from their customers who file for personal bankruptcy. These losses should be a major concern to lawmakers and creditors because as the personal bankruptcy rate continues to increase, these losses could hurt the nation's economy.

Even though there has been an amendment in the exemptions in 1984, there should be a stricter amendment in the homestead exemption of the law.

APPENDIX A
MATRIX OF THE COEFFICIENTS

TABLE 6-1

Time Series

	Personal Bankruptcy	Unemploy- ment Rate	Divorce Rate	Debt Income Ratio	Exemp- tions
Personal Bankruptcy	1.0000				
Unemployment	-0.6302	1.0000			
Divorce Rate	0.7978	-0.7380	1.0000		
Debt Income Ratio	0.5078	-0.2199	0.6464	1.000	
Exemptions	0.8689	-0.6353	0.6514	0.2200	1.0000

TABLE 7-1

Cross-sectional

	Personal Bankruptcy	Unemploy- ment Rate	Divorce Rate	Exemp- tion	Age
Personal Bankruptcy	1.0000				
Unemployment	0.5516	1.0000			
Divorce Rate	0.3737	0.4042	1.0000		
Exemptions	0.2902	-0.0122	0.0363	1.000	
Age	0.2091	0.1628	-0.0845	0.622	1.0000

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